

# Missouri Department of Natural Resources



## PUBLIC NOTICE

### DRAFT MISSOURI STATE OPERATING PERMIT

DATE: September 15, 2006

In accordance with the state Clean Water Law, Chapter 644, RSMo, Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years, unless noted otherwise in the Public Notice for that discharge.

On the basis of preliminary staff review and the application of applicable standards and regulations, the Missouri Department of Natural Resources (MDNR), as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions. The proposed determinations are tentative pending public comment.

Persons wishing to comment on the proposed permit conditions are invited to submit them in writing to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, ATTN: NPDES Permits and Engineering Section / Permit Comments. **Please include the permit number in all comment letters.**

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The MDNR may not consider as relevant comments or objections to a permit based on issues outside the authority of the Clean Water Commission, (see Curd v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be postmarked by October 15, 2006 or received in our office by 5:00 p.m. on October 18, 2006. The requirement of a signed document makes it impossible to accept email comments for consideration at this time. Comments will be considered in the formulation of all final determinations regarding the applications. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

Copies of all draft permits and other information including copies of applicable regulations are available for inspection and copying at DNR's website, <http://www.dnr.mo.gov/env/wpp/index.html>, or at the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

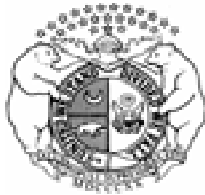
Public Notice Date: September 15, 2006  
Permit Number: MO-0133141  
Kansas City Regional Office

<b>FACILITY NAME AND ADDRESS</b>	<b>NAME AND ADDRESS OF OWNER</b>
Aquila, Greenwood Energy Center, 14015 Smart Road, Greenwood, MO 64034	Aquila, Inc, PO Box 11739, Kansas City, MO 64138
<b>RECEIVING STREAM &amp; LEGAL DESCRIPTION</b>	<b>TYPE OF DISCHARGE</b>
Unnamed Tributary to Big Creek N ½, Sec. 25, T47N, R31W, Jackson County	Industrial, existing

STATE OF MISSOURI

**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No.	MO-0133141
Owner:	Aquila, Inc.
Address:	PO Box 11739, Kansas City, MO 64138
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Aquila, Greenwood Energy Center
Facility Address:	14015 Smart Road, Greenwood, MO 64034
Legal Description:	N ½, Sec. 25, T47N, R31W, Jackson County
Latitude/Longitude:	Outfall #001 +385141.4/-9411754.4, Outfall #002 +385141.5/- 941750.9 Outfall #003 +385143.9/-0941747.8
Receiving Stream:	Unnamed Tributary of East Branch of Big Creek Creek (U)
First Classified Stream and ID:	Big Creek (P) (01257)
USGS Basin & Sub-watershed No.:	(10290108-060003)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

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Effective Date

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Doyle Childers, Director, Department of Natural Resources  
Executive Secretary, Clean Water Commission

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Expiration Date  
MO 780-0041 (10-93)

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Edward Galbraith, Director of Staff, Clean Water Commission

FACILITY DESCRIPTION

Outfall #001 – Power Plant - SIC #4911

Discharge of evaporative cooling blowdown

Design flow is 0.043 MGD.

Outfall #002 – Power Plant – SIC #4911

Discharge from evaporative cooling blowdown.

Design flow is 0.043 MGD.

Outfall #003 – Power Plant – SIC #4911

Discharge from fuel tank area stormwater runoff.

Design flow is 0.32 MGD.

The sanitary waste for this facility is treated by an onsite no discharge septic system.

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 3 of 5	
					PERMIT NUMBER MO-0133141	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until (provide 3 year date ). Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 and #002</u>						
Flow	MGD	*		*	daily	24 hr. estimate
Chloride plus sulfate	mg/L	1000		1000	once/quarter***	grab
Temperature	°F	*		*	once/quarter***	grab
Total Residual Chlorine (Note 1) (note 3)	ug/L	*		*	once/quarter ***	grab
Oil & Grease	mg/L	15		10	once/quarter***	grab
pH – Units (note 3)	SU	*		*	once/quarter ***	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE _.						
<u>Outfall #003</u> note 2						
Visual Inspection	0 =no sheen present, 1= sheen present	*		*	Each discharge	visual
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 4 of 5	
					PERMIT NUMBER MO-0133141	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective ( use date above + 1 day ) and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 and #002</u>						
Flow	MGD	*		*	daily	24 hr. estimate
Chloride plus sulfate	mg/L	1000		1000	once/quarter***	grab
Temperature	°F	*		*	once/quarter***	grab
Total Residual Chlorine (Note 1)	ug/L	16.5		8.2	once/quarter ***	grab
Oil & Grease	mg/L	15		10	once/quarter***	grab
pH – Units	SU	**		**	once/quarter ***	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE _.						
<u>Outfall #003</u> note 2						
Visual Inspection	0= no sheen present, 1= sheen present	*		*	Each discharge	visual
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

\* Monitoring requirement only.

\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6 – 9 pH units

\*\*\* once/quarter in the months of January, June, August, and October

Note 1 - This permit contains a Total Residual Chlorine (TRC) limit.

This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 0.13 mg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 0.13 mg/L will be considered violations of the permit and values less than the minimum quantification level of 0.13 mg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

Note 2 – On Outfall #003, water must be visually checked for presence of oil sheen each time there is a release. If there is an oil sheen, waters must be routed to an oil-water separator.

note 3 – Permittee must comply with final limits for pH and Total Residual Chlorine by the end of the interim period.

### C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list. The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Report as no-discharge when a discharge does not occur during the report period.
4. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
  - (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
  - (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
  - (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
  - (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
  - (e) There shall be no significant human health hazard from incidental contact with the water;
  - (f) There shall be no acute toxicity to livestock or wildlife watering;
  - (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
  - (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
5. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.



Missouri Department of Natural Resources  
Water Protection Program  
NPDES PERMITS AND ENGINEERING SECTION

**Water Quality Review Sheet**  
*Determination of Effluent Limits and Monitoring Requirements*

**Facility Information**

FACILITY NAME: Aquila, Greenwood Energy Center NPDES #: MO-0133141

FACILITY TYPE/DESCRIPTION: Four 61 Megawatt combustion turbines and an over 250,000 gallon fuel tank

EDU\*: Plains/ Osage drainage 8- DIGIT HUC: 10290108 COUNTY: Jackson

\* - Ecological Drainage Unit

LEGAL DESCRIPTION: N ½ Sec 25, T47N R31W LATITUDE/LONGITUDE: 385141.4/-0971175.4

WATER QUALITY HISTORY: Permit is needed due to addition of evaporative cooling discharge. If oil and grease from fuel storage become a problem, then O/W separator may need to be added in future.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.043	none	Unnamed tributary to East branch	5
002	0.043	None	Big Creek	5
003	0.32	None		

**Receiving Waterbody Information**

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
East Branch	U			0		none
Big Creek	P	01257		0.1		LWW,AQL

\*\* Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND)

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

## Mixing Considerations

**Mixing Zone (MZ):** none allowed

**Zone of Initial Dilution (ZID):** none allowed

	Flow (cfs)	MZ (cfs)	ZID (cfs)
<b>7Q10</b>	0	0	0.0025
<b>1Q10</b>	0	0	0
<b>30Q10</b>	0	0	0

## Permit Limits and Information

WASTELOAD ALLOCATION  
STUDY CONDUCTED (Y OR N):

N

USE ATTAINABILITY  
ANALYSIS CONDUCTED (Y OR N):

N

WHOLE BODY CONTACT  
USE RETAINED (Y OR N):

N

### OUTFALL #001 and #002

WET TEST (Y OR N):

N

FREQUENCY: ONCE/YEAR

AEC:           

METHOD:           

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MONITORING FREQUENCY
FLOW	MONITOR		MONITOR	once/quarter
CHLORIDE PLUS SULFATE MG/L	1000		1000	“
TEMPERATURE °F	MONITOR		MONITOR	“
pH (S.U.)	MONITORING, THEN 6-9		MONITORING, THEN 6-9	“
TOAL RESIDUAL CHLORINE UG/L	MONITOR ONLY, THEN 16.5		MONITOR ONLY, THEN 8.2	“
				“
OIL & GREASE (MG/L)	15		10	“

### OUTFALL #003

WET TEST (Y OR N):

N

FREQUENCY: ONCE/YEAR

AEC:           

METHOD:           

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MONITORING FREQUENCY
VISUAL INSPECTION	*		*	<b>each discharge</b>

# Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

## Derivation and Discussion of Limits

Wasteload allocations (WLA) were calculated using water quality criteria and the dilution equation below:

$$C = \frac{(C_s * Q_s) + (C_e * Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration

C<sub>s</sub> = upstream concentration

Q<sub>s</sub> = upstream flow (cfs)

C<sub>e</sub> = effluent concentration

Q<sub>e</sub> = effluent flow (cfs)

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable acute water quality criteria (CMC: criteria maximum concentration) and stream volume of flow.

**Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).**

- **Chloride plus Sulfate.** 10 CSR 20-7.031 (4) (L)
- **Total residual Chlorine**
- Warm water acute criteria = 19 g/L, warm water chronic criteria = 10 g/L [from 10 CSR 20-7.031, Table A]. Background = 0.0 mg/L. 0.043 MGD\* 1.55= 0.067 cfs

Chronic:

$$C_e = ((0.067 + 0.0)10 - (0.0 * 0.0)) / 0.067$$

$$C_e = 10.0 \text{ g/L}$$

$$WLA_c = 10.0 \text{ g/L}$$

Acute:

$$C_e = ((0.067 + 0.0)19 - (0.0 * 0.0)) / 0.067$$

$$C_e = 19.0 \text{ g/L}$$

$$WLA_a = 19.0 \text{ g/L}$$

$$LTA_c = 10 (0.527) = 5.3 \text{ g/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$LTA_a = 19 (0.321) = 6.1 \text{ g/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

Use most protective number of LTA<sub>c</sub> or LTA<sub>a</sub>. = 6.3 ug/L

$$MDL = 5.3 (3.11) = 16.5 \text{ g/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 5.3 (1.55) = 8.2 \text{ g/L}$$

$$[CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

**Oil and grease** from General Permit for Petroleum Storage MO-G35. Conventional pollutant. Effluent limit for protection of aquatic life.

**Total Suspended Solids** monitor only

Date: 8-3-2006

Reviewer: Tim Stallman